DOCUMENT RESUME

ED 257 254 EC 172 581

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TITLE Modifications, Support and Mainstreaming: Excellence in Mainstreaming Practices and Evaluation.
PUB DATE 13 Oct 84
NOTE 17p.; Paper presented at the Annual Convention of the Evaluation Research Society (San Francisco, CA, October 10-13, 1984).
PUB TYPE Speeches/Conference Papers (150) -- Information Analyses (070) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Disabilities; Elementary Secondary Education; *Mainstreaming; Program Descriptions; *Program Evaluation

ABSTRACT

The paper makes two premises: (1) excellence in mainstreaming requires modifications to regular classroom instructional activities, materials, and assessment, and support and assistance for the teachers making these modifications; (2) one criterion to judge the excellence of evaluation of mainstreaming programs is the degree to which an evaluation examines what modifications and support are occurring in mainstream classes. The paper begins with a review of evidence supporting the efficacy of modifying instruction to accommodate handicapped learners in regular classes, and explains why modifications and support are not implemented in a large number of classrooms. An overview follows of the types of evaluations of mainstreaming efforts conducted in the last 10 or so years. Four studies are then described in detail; these four evaluations attempt to focus on effective mainstreaming practices, including modifications and support. Five sets of guidelines are provided to assist evaluators in identifying effective modification and support practices and in focusing on implementation of these practices in regular classrooms. (Author/CL)

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MODIFICATIONS, SUPPORT, AND MAINSTREAMING: EXCELLENCE IN MAINSTREAMING PRACTICES AND EVALUATION

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Paper presented at the Annual Convention of the Evaluation Research Society, October 13, 1984, San Francisco

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Abstract

The paper makes two premises: (1) excellence in mainstreaming requires modifications to regular classroom instructional activities, materials, and assessment, and support and assistance for the teachers making these modifications; (2) one criterion to judge the excellence of evaluations of mainstreaming programs is the degree to which an evaluation examines what modifications and support are occurring in mainstream classes.

The paper begins with a review of evidence supporting the efficacy of modifying instruction to accomodate handicapped learners in regular classes, and explains why modfications and support are not implemented in a large number of classrooms. This review is followed by an overview of the types of evaluations of mainstreaming efforts that have been conducted in the last 10 or so years. Four studies are then described in detail; these studies are offered as examples of excellent mainstreaming evaluations. Unlike many of the evaluations cited in the overview, these four evaluations attempt to focus on effective mainstreaming practices, including modifications and support. Five sets of guidelines are provided to assist evaluators in identifying effective modification and support practices and in focusing on implementation of these practices in regular classrooms.

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Mainstreaming is a guiding principle of the federal special education law (P. L. 94-142). The goal of mainstreaming is to educate physically, emotionally, and educationally handicapped students in regular, non-special education classes, for as great a portion of the school day as is appropriate for each handicapped student. A result of following the mainstreaming principle is that many mildly handicapped students, who were formerly socially and educationally segregated from their peers, are now attending regular classes with their peers. I want to make two points in my talk today on mainstreaming. They represent my professional viewpoint, based on my experience as a special educator and developed in the last four years while working as a program evaluator. First, excellence in mainstreaming requires modifications to regular class instructional materials, activities, and assessment, and support and assistance to the teachers making these modifications. For many handicapped students, unmodified regular classroom instruction may not be appropriate. Second, one criterion to judge the excellence of evaluations of mainstreaming programs is the degree to which an evaluation examines what modifications and support (M/S) are occurring in mainstream classes. The objective of this criterion is to encourage evaluators to identify examples of effective mainstreaming and M/S practices, and to develop guidelines for implementing these practices.

I will try to substantiate these two points in the remainder of my talk. First, I will review briefly some of the evidence supporting the efficacy of modifying instruction to accommodate handicapped learners in regular classes, and explain why M/S are not implemented in a large number of classrooms. Next, I will provide an overview of the types evaluations of mainstreaming programs that have been done in the last 10 or so years. I will then describe in some detail four studies that are examples of excellent mainstreaming evaluations. Unlike many of the evaluations represented in my overview, these evaluations attempt to focus on effective mainstreaming practices, including M/S. Finally, I will outline five sets of guidelines for focusing on M/S practices and their implementation.

Mainstreaming: The Philosophical Heart of P.L. 94-142

The goal of mainstreaming is to provide students with special educational needs, and I quote, a "free and appropriate public education" in the "least restrictive

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environment." Definitions of "appropriate education" and "least restrictive environment" become intertwined when making placement decisions for special education students: the least restrictive environment is the classroom situation most like regular education classrooms in which a special education student can function adequately. One goal of mainstreaming, then, is to educate mildly handicapped students along with their non-handicapped peers in regular classes in order to avoid stigmatizing students by segregating them in special classes, and to assure that handicapped students have the same educational opportunities as non-handicapped students. But the goal is to integrate these students so that they can function and learn successfully in regular classes, not to schedule them into classes where they are likely to flounder.

To accomplish this goal, classroom teachers need to modify regular classroom curriculum, materials, and instructional procedures. Modifications can range from simple ones, requiring little coordination (e.g., changing a student's seat), to complex changes (e.g., gathering less difficult reading materials to replace the class textbook), to extremely complex ones requiring a great deal of coordination (e.g., providing individualized instruction for all students in a classroom). In addition, special education staff must provide support and guidance to regular classroom teachers as they make modifications. Support services can also range from the simple (e.g., inform teachers of which of their students receive special education services) to the complex (e.g., consult with and assist teachers in modifying lesson plans, materials, and assessment procedures).

There is a growing body of evidence that M/S can make mainstreaming the most appropriate and effective placement for mildly handicapped students. The importance and effectiveness of M/S is reflected in a wide variety of sources, based on empirical results and professional judgment and experience (see, for example, Biklen, 1982; Fullan, 1982, p. 34; Harlow, 1979, p. 34; Leinhardt & Pallay, 1982; Meckler & Vogler, 1984; U.S. Government Accounting Office, 1981a). In a review of studies comparing restrictive versus non-restrictive educational settings for low achievers (both handicapped and non-handicapped), Leinhardt and Pallay (1982) found that educational setting in and of itself has no impact on academic achievement; it is the presence of key elements in the setting, most of which alleviate teachers' classroom management problems and contribute to increased academic learning time, that distinguish successful from unsuccessful programs. They describe a three-year program (the University of Vermont Consulting Teacher Program) in which support teachers were

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hired specifically and exclusively to assist regular class teachers in planning and implementing classroom modifications that were developed at the University of Vermont. These support teachers were not required to deliver direct services to students. Handicapped students in the consulting teacher program showed higher achievement gains over three years of the program than did similar students in traditional special education programs. In fact, the difference in reading and math gain scores is remarkable. Leinhardt and Pallay (1982) conclude that "for moral and social reasons, the least restrictive environment is preferable, and this review indicates [that] most of the valuable practices can be implemented in...regular educational settings" (p. 574).

However, M/S appear not to be implemented in a large number of classrooms. For example, Biklen (1982) and Bogdan (1983a, 1983b) spent two years studying mainstreaming practices of 25 schools (see my review below). Despite the fact that these 25 schools had been nominated for study as exemplary, Biklen and Bogdan report little evidence that teachers modifiy their instruction to accommodate handicapped students. In fact, they reported that mainstreamed special education students were expected to fit in (Bogdan, 1983b).

There are many reasons why M/S are not implemented; I briefly discuss three of the most important. First, there is no language in the P.L. 94-142 regulations that mandates M/S nor guidelines for defining and providing "appropriate" educational services to handicapped learners. Thus, the regulations neither mandate nor guide schools that wish to abide by the spirit of the law. Second, regular and and special education teachers have little capacity to implement M/S. Regular class teachers have 30 to 150 students to plan for and teach each day, and little preparation time during school hours. Similarly, special education teachers have their own students to plan for and teach each day in addition to conducting and reporting diagnostic evaluations and attending evaluation team meetings. Both teachers spend the majority of their days instructing students and have little time for planning and implementing instructional modifications. Finally, although clear strategies for modifying classroom activities to accommodate handicapped learners have been developed in recent years, most are geared only for elementary classrooms, many are in the form of helpful hints that have not been systematically evaluated, and others are extensive and expensive system-level remedial programs that require hiring additional staff (e.g., the University of Vermont study above) and that may benefit all students (see the discussion of the Learning Research and Development Center evaluation

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below).

Other factors work against the implementation of M/S in regular classes. For example, special education textbooks for either regular or special education teachers rarely make clear how busy teachers can implement or consult on regular classroom modifications. In addition, regular classroom teachers report that they do not feel adequately trained to modify their instructinal programs to accommodate mainstreamed students (Meckler and Vogler, 1984; Ringlaben and Price, 1981), although elementary teachers are more likely to attempt "major...interventions" in their classrooms before referring a student for special education services (Pugach, 1984, p.6).

The Record on Evaluations of Mainstreaming

Evaluators have focused on various aspects of mainstreaming programs and practices since P.L. 94-142 came into effect on September 1, 1978. Early evaluations compared the effects of restrictive versus non-restrictive (i.e., mainstream versus segregated) settings on the academic achievement and social adjustment of handicapped learners. There remains some disagreement over the results of these studies (see, for example, Bogdan, 1983a; Morsink, 1984, p. 18), although Leinhardt and Pallay's comprehensive review (1982) concludes that effective instructional management, not setting, is the key variable. Other evaluations and studies have focused on the degree of compliance with procedural regulations (Sansone and Zigmond, 1984; Weatherley, 1979) and the fairness of identification and placement procedures (Pugach, 1984); the ethnic and other characteristics of students in various special education classifications (U.S. Government Accounting Office, 1981a, 1981b); and the costs of financing special education (Elmore, 1982; Kakalik, Furry, Thomas, and Carney, 1981). Still other studies have addressed more general questions. For example, Levine and Wexler ask "Does 94-142 Work?" (1981). They conclude that it is "too early to tell" (p. 168). Finally, other researchers have developed and advocated evaluation designs and models meant to examine components of mainstreaming practices and their relationship to their organizational contexts (Hauser, 1979) and the degree of implementation and effects of a specific elementary-level adaptive instruction program (Wang, Peverly, and Randolph, 1984).

This review of evaluations of mainstreaming programs and practices is intended to be representative rather than exhaustive. However, two types of evaluation information

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appear to be lacking in the literature on mainstreaming discussed above: (1) evaluations that identify effective M/S programs and practices and that describe how they are implemented and how they work; and (2) descriptions of evaluation efforts undertaken by school districts to improve their current mainstreaming practices (Sansone and Zigmond, 1984). Examples do exist of evaluations that describe mainstreaming practices and their implementation in a way that exemplifies my criteria for excellence in mainstreaming practices and evaluations: they focus on mainstreaming practices, including M/S. I briefly describe four such evaluations below.

Case Studies of 25 Exemplary Mainstreaming Programs

Biklen (1982) and Bogdan (1983a, 1983b) recently spent two years conducting unstructured interviews and observations of 25 mainstreaming programs. These programs had received multiple nominations as exemplary in integrating disabled students into regular classes from parents, administrators, and teachers. The 25 programs serve students in all grades (K-12) and with various educational, physical, and emotional handicaps. The researchers' stated goal was to explore how these exemplary programs work; to describe what mainstreaming activities actually occur in schools, how various actors think about mainstreaming, how they strive to integrate handicapped students, and to record the experiences of students, teachers, and administrators.

They found, first of all, wide variation among these mainstreaming programs in the degree to which special education students and services are integrated with regular education programs. Some are highly integrated, but most merely are added on and expected to "fit into existing arrangements" (Bogdan, 1983b, p. 428). In addition, they gleaned from the 25 case studies 13 factors that appear to be associated with the perceived success of these programs. Some of these factors are similar to characteristics identified in the effective schools literature and to activities that promote successful local implementation of educational innovations (see Fullan, 1982, chap. 5). Three of the factors only hint at the idea of M/S.

The importance of these case studies to the present discussion is their goals and focus: they attempt to identify successful strategies of exemplary mainstreaming programs for accommodating handicapped learners. However, Biklen and Bogdan do not explicitly identify M/S activities or strategies. Perhaps no such practices occurred in these 25 programs during the study, or perhaps they were

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overlooked by the researchers. However, descriptions of mainsteaming practices in other mainstreaming evaluations could further verify the 13 factors already identified, and perhaps identify other effective factors and practices such as M/S.

Unlike these case studies, the next study considers the appropriateness of mainstreaming practices. Its focus is not on M/S strategies, but on the regular education cl sses handicapped students attend.

Analysis of the Appropriateness of Student Schedules

Sansone and Zigmond (1984) analyzed the weekly schedules of 844 mildly handicapped (socially and emotionally disturbed, educable mentally retarded, and learning disabled) elementary school students in a large urban school district. They analyzed and described the degree of appropriateness of each student's schedule in order to evaluate and improve the district's mainstreaming practices. (Remember that the goal of mainstreaming is appropriate education in the least restrictive environment.) Appropriateness of student schedules was defined by three factors: assignment of handicapped students to regular classes (1) with same-grade students; (2) with a fixed group of students; and (3) every time the class met.

They found that the students in this sample spent only 14.5% of their week in regular education classes (the remainder of the time in special education classes), and for the most part in non-academic classes like music and art. They also showed that total school enrollment affects the appropriateness of scheduling, while other school characteristics like average class size, proportion of handicapped students, and whether or not special education teachers were assigned preparation periods, do not. The low rate of mainstreaming into regular academic classes in this study is likely to have been influenced by teachers' and others' judgments about the lack of readiness of students to function in these classes. However, no clear conclusions can be drawn about the influence of student readiness since this variable was used only as a post hoc explanation for the low rate of mainstreaming, and not introduced into the study's design as an explanatory variable.

Unlike the previous study reviewed, this study does not attempt to identify promising M/S practices. However, it provides information beyond simple verification that handicapped students are scheduled into mainstream classes. Its value as a model for other mainstreaming evaluations

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lies in its attempt to define and evaluate the appropriateness of mainstreaming placements, and to identify school variables that may hinder or enhance the appropriateness of these placements. It represents a logical first step in evaluating a mainstreaming program where M/S activities are irrelevant because of the infrequency with which students attend mainstream classes.

The next two studies focus directly on the types of M/S strategies that exemplify excellence in mainstreaming.

Evaluation of a Classroom Intervention Inservice Program

Meckler and Vogler (1984) trained 25 grade 3 and grade 6 teachers serving 64 mildly handicapped students in 16 elementary schools to modify their classroom practices to accommodate special education students. They hypothesized that if teachers implemented these modifications and received on-going support in implementing these modifications, then handicapped students' reading and mathematics achievement test gain scores would exceed those of students whose teachers did not receive the same training. They also hypothesized that teachers who received the training would refer significantly fewer students for special education services.

Twenty-five teachers in the experimental group received 20 hours of inservice instruction and practice over two days, in addition to four one-hour follow-up instructional sessions and weekly consultations, feedback, and support for implementation of educational and behavioral strategies aimed at the mainstreamed students. Course content included knowledge and skills in classroom management, diagnostic assessment, learning and teaching styles, individualizing instruction, and academic learning time. Course content was intended to improve teachers' management of the total classroom, to train teachers to institute a reward system for students' completion of tasks, and to individualize instruction based on assessment of students' learning styles and achievement levels. Inservice activities included simulations, problem-solving exercises, task sheets, case studies, and planning sessions. Teachers in the control group received no inservice training. Schools were included in the experimental group based on their willingness to participate in inservice training. Control schools were chosen to match the experimental schools on measures of SES, achievement test scores, and school and community size.

Average raw gain score differences for students (grades 3 and 6) of teachers who received inservice training were

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significantly higher than those for students whose teachers did not receive training. In addition, teachers who received inservice training made significantly fewer special education service referrals.

This study demonstrates the effects of modifying regular classroom instruction on the achievement of mainstreamed mildly handicapped students. (However, caution should be exercised in interpreting a direct causal link between these modifications and student achievement gains because of the lack of experimental control over initial characteristics of the students and teachers in the sample.) Further, it demonstrates specific modification and support strategies that can be learned and implemented by regular and special education teachers working in collaboration. The study also highlights the importance of and time costs required in implementing and supporting systematic modification strategies.

The last study to be reviewed also illustrates the effects of modifying regular classroom instruction. In addition, it includes measures of the degree to which specific instructional modifications were implemented.

Evaluation of the Implementation and Efficacy of a Mainstream Basic Skills Training Program

Wang et al. (1984) investigated the feasibility and efficacy of a comprehensive basic skills training program implemented in regular grades 1 to 4 classrooms. The basic skills program, the Adaptive Learning Environments Model (ALEM), was developed earlier at the University of Pittsburgh's Learning Research and Development Center and implemented and evaluated over the course of a school year in five schools in three large urban districts with different demographic characteristics. The program is intended to meet the special learning needs of both special and regular education students in their regular classrooms. In the ALEM, instruction is individualized, focused on basic skills mastery, and designed to inculcate attitudes and processes of inquiry, independence, and cooperative learning.

Twenty-six teachers serving between 16 and 33 regular education and mildly handicapped students (with a mean of five special education students per class) participated in the study. The researchers measured degree of program implementation, classroom process outcomes, student academic and attitude outcomes, and teacher and parent attitudes toward the program. Wang and her associates hypothesized

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that higher degrees of implementation would be associated positively with some classroom processes (e.g., student-initiated interactions with teachers) and negatively with others (e.g., time spent waiting for help). Further, they hypothesized that both degree of implementation and classroom processes would be positively associated with mainstreamed students' reading and mathematics achievement gain scores.

Results indicate that implementation of the ALEM was established and maintained over the course of a school year in these schools with different demographic characteristics, and that implementation did lead to predicted classroom processes. The authors indicate that classroom, school, and district-level implementation supports are included in the ALEM, but do not describe these supports. In addition, both regular and mainstreamed students in the ALEM classrooms showed greater-than-expected reading and mathematics achievement scores gains and little difference in classroom behavior (i.e., frequency of discipline problems). Mainstreamed students' achievement gains averaged slightly over one year, higher than the expected six-month gain per school year typically found with students in similar special education classifications. Finally, teachers' and parents' perceptions of the ALEM were positive.

Like the previous study, this evaluation demonstrates the feasibility and positive effects of implementing a system for modifying regular classroom instruction to accommodate handicapped learners. Although supports for implementation of modifications are not specified in the report, the reported high degree of implementation suggests that the researchers must have provided support services to classroom teachers over the course of the study. Unlike the previous study reviewed, this evaluation actually measures degree of implementation of modification strategies as well as demonstrates the positive effects of these modifications on student achievement and affect.

My purpose for reviewing these four studies is to demonstrate the types of evaluation activities that exemplify excellence in mainstreaming program evaluations. Each in its own way focuses on some aspect of M/S or other important mainstreaming practices. The four studies examine in different ways not just that mainstreaming is occurring in schools, but in what ways mainstreaming and instructional modifications are occurring, how they are implemented and supported, and how they affect various student outcomes. The studies attempt to identify effective mainstreaming practices, verify the appropriateness of student placements, demonstrate the effectiveness of training and supporting

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practicing teachers in modifying instruction, and demonstrate the feasibility and effectiveness of implementing a comprehensive system of M/S. In addition, these studies highlight the great amount of knowledge, skill, energy, collaboration, and coordination required to modify regular classroom instruction and to support these modifications. Finally, the four studies highlight the lack of research and evaluation on M/S at the secondary level. The focus, designs, and results of these and other evaluations of mainstreaming practices suggest some guidelines for th design of future evaluations of mainstreaming programs. I will briefly list and discuss some of these guidelines in the final section of this paper.

Implications for Designing Evaluations of Mainstreaming Programs

The inadequacy of most M/S efforts to accommodate mainstreamed mildly handicapped students in regular classrooms remains a challenge for special educators. Evaluators can help meet this challenge by incorporating in the designs of their evaluations of mainstreaming programs a focus on M/S strategies and modes of implementation. Below are some guidelines for developing this focus.

1. Determine the extent of implementation of mainstreaming practices before or in conjunction with evaluating the impact of mainstreaming on mildly handicapped students' achievement and social adjustment, and on teachers and other students. This should amount to in what ways teachers have modified instruction, materials, and assessment procedures to accommodate handicapped learners, how these modifications have been implemented and supported (and by whom), and their impact. In some schools it may be most effective to provide a school-wide management system for modifying and individualizing instruction, in others a classroom management system for all students (see the review of the Wang and associates study above), and in others to support individual teachers in designing and implementing their own modifications for only some students.

2. Examine the number and types of contacts between special education and regular classroom teachers. Are they student-related? Do they concern discipline or instruction problems, or both? Do they focus on one student or a number of students? Over the course of a school year, do special and regular education teachers consult on all handicapped students, or only some (e.g., the most difficult) students? Do these contacts involve all special educators whose students are mainstreamed, or only some? All classroom

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teachers who serve special education students, or only some? These are only a sample of the questions that can be considered.

3. As part of an evaluation of a mainstreaming program, you might consider including an examination of any in-service training provided to regular classroom teachers on the topic of mainstreaming. The in-service course may have been designed to train teachers to implement a new curriculum or instructional management and delivery system, or to provide a set of strategies or "bag of tricks." Merely noting the absence of such training is relevant. What about the content of such courses -- is it general information or specific M/S strategies? How many teachers have participated in this in-service, and what is their assessment of its value? The provider of such in-service courses is important: if it is someone outside of the school or school district, that person may not be available to support implementation of the new strategies. In addition, an in-service course provided by an outside consultant may de-legitimize and hinder the activities of a school's special education staff. Finally, how much preparation did regular classroom teachers receive in their pre-service training? Was the content of their mainstreaming courses general information or specific modification and implementation strategies? Any questions concerning regular and special education teachers' preparation for accommodating mainstreamed special education students can be considered.

4. Perhaps an examination of M/S activities is premature, and the evaluation of a particular program should focus on the degree and appropriateness of mainstreaming. Of importance are questions concerning whether students are mainstreamed with same-age or same-grade students, whether they attend all periods in which a course is taught, and (especially at the elementary level) whether they are mainstreamed into the same classroom or a number of classrooms (see the review of the Sansone and Zigmond evaluation above). Also important is the types of classes handicapped students are mainstreamed into: are some students attending only non-academic classes, and is this appropriate placement? You might find it useful to evaluate the appropriateness of handicapped students' placements as part of an evaluation of other aspects of a mainstreaming program, since the existence and quality of M/S activities may be irrelevant in programs where students are not appropriately mainstreamed.

5. Biklen (1982, pp. 138-141) has identified seven major factors from his case studies of 25 mainstreaming programs. He asserts that these factors should ease a school system's

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implementation of mainstreaming and the least restrictive environment concept. These factors include a continuum of services (e.g., inter-district agreements to pool some services, self-contained classrooms, resource rooms, itinerant services, and regular class placement with and without support services), monitoring (including parent participation in advisory groups and, possibly, outside program audits), program philosophy (the degree to which a school's administration, faculty, and staff agree with and advocate mainstreaming and accomodation of handicapped students in regular classes), and curriculum (e.g., teaching students and teachers positive attitudes toward handicaps and differentness). These factors can affect the degree to which M/S strategies are implemented. Also, they can serve as guidelines in shaping the focus of an evaluation of a mainstreaming program onto M/S strategies and implementation.

Finally, evaluators can adapt comprehensive and highly specified evaluation designs like that in the Wang and associates evaluation, or models designed to examine components of mainstreaming such as Hauser's (1979; see the section on the "Record on Evaluations of Mainstreaming" above). Or evaluators can choose to focus on specific components or activities of a mainstreaming program. The point is that excellent mainstreaming programs should include effective M/S practices and excellent evaluations of mainstreaming programs should examine these practices.

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